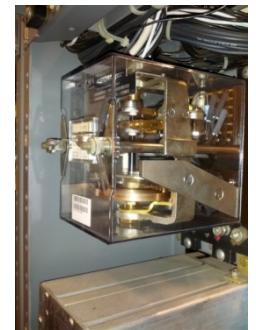


Instructor Guide



306: Troubleshooting and Repair of Interlockings Module 2: Troubleshooting and Repair



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Troubleshooting and Repair of Interlockings

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Icons Used In This Guide



REVIEW slides



ASK



CLASSROOM ACTIVITY



SMALL GROUP ACTIVITY



INDIVIDUAL ACTIVITY



WRITE



Multimedia



REFER participants to

Agenda

Topic #	Topic Title	Duration
1	Overview	15 minutes
2	Using Prints, Schematics, etc.	20 minutes
3	Typical Problems	30 minutes
4	Scenario-Based Sample Problems	30 minutes
5	Summary	15 Minutes
Total Time:		110 Minutes

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Overview

Purpose The purpose of this module is to:

Provide participants with the background knowledge and theories necessary for rail HVAC maintenance.

Objectives

At the end of this lesson, the signal maintainer trainee will be able to:

- Demonstrate knowledge of the basic theories of heat
- Describe the basic concepts of refrigeration and air conditioning
- Describe the basic components and basic concepts of a typical heating system
- Demonstrate basic knowledge of HVAC piping and tubing

Materials

Mandatory

Make sure you have the following

- PowerPoint Presentation
- Coursebook
- Quizzes
- Pencils
- Note paper
- White board/ Flip chart and markers

Optional

You may also want the following for optional activities:

- Norming point reader, norming point and/or programmer
- Location specific norming point map
- Optical Speed Sensor
- Power Supply Unit
- Wayside amplifier/mock-up
- Location specific troubleshooting flowchart

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Module Length: 110 min Time remaining: 110 min This section: 15 min (6 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="54 464 158 564"></div> <div data-bbox="189 485 405 521">REVIEW slides</div> <div data-bbox="19 785 444 835"> <h3>Instructor's Notes</h3> <hr/><hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 421 1023 464">In your own words:</div> <div data-bbox="676 471 1429 671"> <p>Welcome to the second modules of Course 306: <i>Troubleshooting and Repair of Interlockings for Signals</i>. Module 2 covers common interlocking malfunctions and and sequences of corrective actions.</p> </div> <div data-bbox="676 685 937 721">Advance slide.</div> <div data-bbox="676 749 1410 863"> <p>This module has six sections. It will cover basic procedures and processes for troubleshooting interlockings.</p> </div> <div data-bbox="676 878 1304 921"><i>Read through the sections of the outline.</i></div> <div data-bbox="676 928 927 963">Advance slide.</div> <div data-bbox="676 992 1429 1242"> <p>In this module we will discuss the general processes and of troubleshooting interlockings and cover examples of repairing typical problems. Advance through slide's animations to show each learning objective. Ask a volunteer to read each objective as it is displayed.</p> </div> <div data-bbox="676 1263 927 1306">Advance slide.</div>	<div data-bbox="1497 471 1864 506">✓ PPT slides 1, 2, 3</div> <div data-bbox="1535 528 1854 763"> </div> <div data-bbox="1535 792 1854 1028"> </div> <div data-bbox="1535 1056 1854 1292"> </div>

Troubleshooting and Repair of Interlockings

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Module Length: 110 min Time remaining: 75 min This section: 30 min (13 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="54 464 158 564"></div> <div data-bbox="189 485 405 521">REVIEW slides</div> <div data-bbox="19 792 444 835">Instructor's Notes</div> <div data-bbox="19 892 608 1242"> <hr/><hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 421 1023 464">In your own words:</div> <div data-bbox="676 471 1439 756"> <p>As in previous signal courses, this module will use FRA recommendations as guidelines as the minimum standard to follow. However, many agencies have their own policies and procedures regarding interlocking troubleshooting, as such signal maintainers must follow their agency's recommendations and policies.</p> </div> <div data-bbox="676 771 927 813">Advance Slide.</div> <div data-bbox="676 856 1439 1106"> <p>Signal maintainers use track plans, electrical prints and schematics to determine which part of an interlocking system is malfunctioning. These prints may be located in the bungalow and/or interlocking case at each interlocking. They should be legible and up to date.</p> </div> <div data-bbox="676 1120 1400 1206"> <p><i>Click through slide to advance animations. Ask participants to take turn reading the points.</i></p> </div> <div data-bbox="676 1206 927 1242">Advance Slide.</div>	<div data-bbox="1497 471 1835 514">✓ PPT Slides 6, 7</div> <div data-bbox="1535 528 1854 763"> </div> <div data-bbox="1535 792 1854 1028"> </div>